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10/522,903	02/01/2005	Stephanie Frahn	264742US0X PCT	7011
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER NERANGIS, VICKEY MARIE	
			ART UNIT 1762	PAPER NUMBER
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/522,903  
Filing Date: February 01, 2005  
Appellant(s): FRAHN ET AL.

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James J. Kelly  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/22/2010 appealing from the Office action mailed 7/27/2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

Claims 2, 6, 7, 11-13, and 18-20.

**(4) Status of Amendments After Final**

An amendment filed after final rejection on 12/22/2010 was entered. In view of this amendment cancelling claim 21, the 35 USC 112, 1st paragraph rejection and 35 USC 103(a) rejection over claim 21 were withdrawn.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

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REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant’s brief.

**(8) Evidence Relied Upon**

6,020,419	BOCK et al	2-2000
6,022,404	ETTLINGER et al	2-2000

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 2, 6, 7, 11-13, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bock (US 6,020,419) in view of Ettlinger (US 6,022,404).

Bock discloses a coating composition comprising 0.5-25 wt % based on solids of hydrophobic, pyrogenic silica, a binder such as one of polyester, and polyacrylate, polyol (col. 4, lines 13-26 and col. 5, lines 1-29), and surface-modified pyrogenic silica and solvent such as aromatic and aliphatic hydrocarbons (col. 6, lines 17-30). Additives are also used (col. 6, line 60 to col. 7, line13). See examples.

Bock teaches surface modification of pyrogenic silicas in order to provide for decreased agglomeration and increased stabilization (col. 3, lines 46-55) and explicitly teaches that pyrogenic silica is treated with octyltrimethoxysilane or dimethyldimethoxysilane, which provides for octylsilyl and dimethylsilyl groups on the surface of the pyrogenic silica (col. 3, lines 60-67).

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Bock fails to disclose silica treated with hexadecylsilyl groups.

Ettlinger discloses surface-modified pyrogenically produced mixed oxides (including  $\text{SiO}_2$ ) which are surface treated with a silicon-containing compounds such as silanes (abstract). Formulas (a) and (b) in col. 1, lines 20-34 are representative of Bock's octyltrimethoxysilane and dimethyldimethoxysilane, respectively. Both of these formulas allow for the silyl group to have 1-20 carbon atoms which encompasses 16 carbon atoms, i.e., hexadecylsilyl.

Given that both Bock and Ettlinger both teach modifying the surface of a pyrogenic metal oxide with silanes and further given that Ettlinger teaches that a silane functionalized with methyl, octyl, and hexadecyl are functional equivalents, it would have been obvious to one of ordinary skill in the art to functionalize the surface of Bock's pyrogenic silica with hexadecylsilyl groups, absent a showing of unexpected or surprising results. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

#### **(10) Response to Argument**

Appellant argues that Bock fails to disclose a "structurally modified" pyrogenic silica.

While the instant claims recite "structurally modified" silica, it is not made clear how "structurally modified" silica is different from the silica taught by Bock or why the pyrogenic silica of Bock is not structurally modified. Bock teaches that the silica is prepared by jet dispersion, and it is the examiner's position that this process causes the silica to be "structurally modified" due to deagglomeration of silica agglomerates. It is noted that the specification does not elaborate on how the instant silica is "structurally modified."

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Appellant argues that Ettlinger fails to provide a skill artisan with sufficient motivation and guidance to particularly select the claimed hexadecylsilyl surface modifying group.

Ettlinger discloses surface-modified pyrogenically produced mixed oxides (including  $\text{SiO}_2$ ) which are surface treated with a silicon-containing compounds such as silanes (abstract). Formulas (a) and (b) in col. 1, lines 20-34 are representative of Bock's octyltrimethoxysilane and dimethyldimethoxysilane, respectively. Both of these formulas allow for the silyl group to have 1-20 carbon atoms which encompasses 16 carbon atoms, i.e., hexadecylsilyl. It is the examiner's position that Ettlinger teaches that a silyl group with 8 carbon atoms is functionally equivalent to a silyl group with 16 carbon atoms. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

Appellant argues that unexpected results have been established for a surface-modified pyrogenic silica having hexadecylsilyl groups with respect to improved scratch resistance and residual gloss without undesirable orange peel.

The data in the specification as originally filed has been fully considered, however, it is insufficient to establish unexpected results for three reasons.

First, an unexpected improvement with respect to residual gloss without undesirable orange peel is not established given that some of the comparative examples have higher residual gloss than the inventive examples. In particular, note in Table 4 that S7 and S8 (dimethylsilyl groups) both have higher residual gloss than S1 and S2 (hexadecylsilyl groups) and in Table 6

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that Silica 8 (dimethylsilyl groups) has higher residual gloss than Silica 1 (hexadecylsilyl groups).

Second, the comparison made between “structurally modified” silica and one that is not structurally modified is not a comparison to the closest prior art given that Bock teaches that its silica is structurally modified by jet dispersion. Case law holds that comparative showings must compare the claimed subject matter with the closest prior art to be effective. See *In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 71 (CCPA 1979).

Third, the data is not reasonably commensurate in scope with the scope of the claims. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). Specifically, the exemplified amount of silica of 5 wt % in Examples 1-3 (Tables 3, 4, and 5) is not reasonably commensurate with claimed 0.5-25 wt %. Furthermore, the examples do not specify how many hexadecylsilyl groups are attached to the silica and therefore cannot show that any amount of hexadecylsilyl groups is sufficient to provide for improved scratch resistance. Also, the type of polymer composition added to the lacquer is not reasonably commensurate given that the examples only include polyacrylates. Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.” In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range (i.e., scope). *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d).

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**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Vickey Nerangis

/Vickey Nerangis/  
Primary Examiner, Art Unit 1762

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